

Headquarters U.S. Air Force

Integrity - Service - Excellence

GCSS-AF Technology & Operations Status Industry Day



John Wunder
John.Wunder@LMCO.COM
Lockheed Martin Systems Integration -
Owego

U.S. AIR FORCE

12 May 2003



U.S. AIR FORCE

Outline

- **Overview**
- **GCSS-AF Architecture**
- **Production Environment**
- **Discussion**



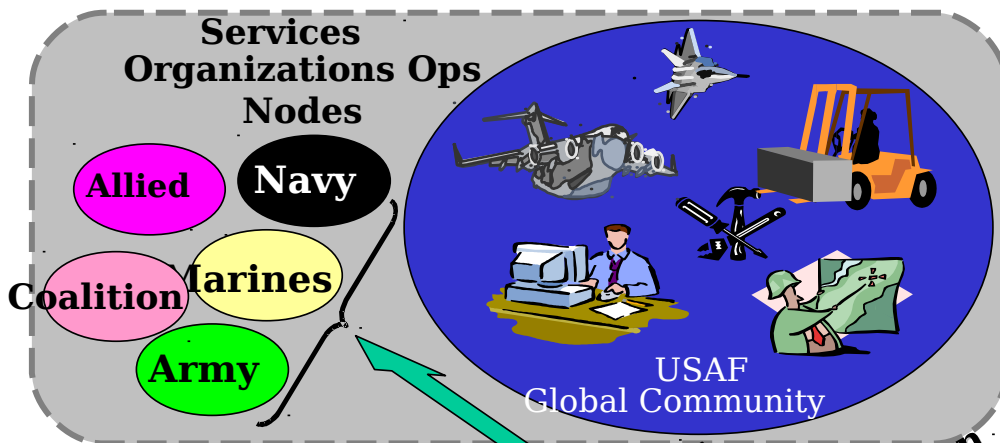
U.S. AIR FORCE

GCSS-AF Concept of Operations

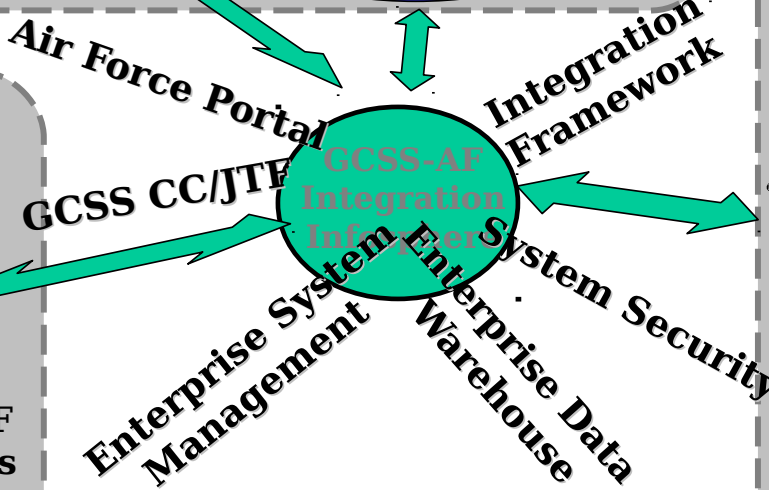
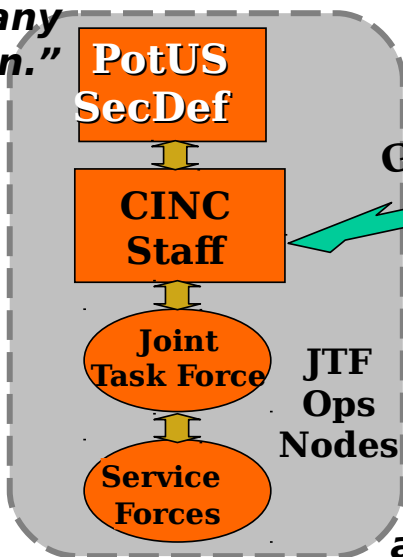
Users of ACS Information

"Provide access and connectivity to any authorized User (within Security parameters) at any location."

"Provide timely, trusted, and accurate Agile Combat Support information to the Warfighter."



"Provide modernized and integrated AISs through cross-functional business process reengineering."



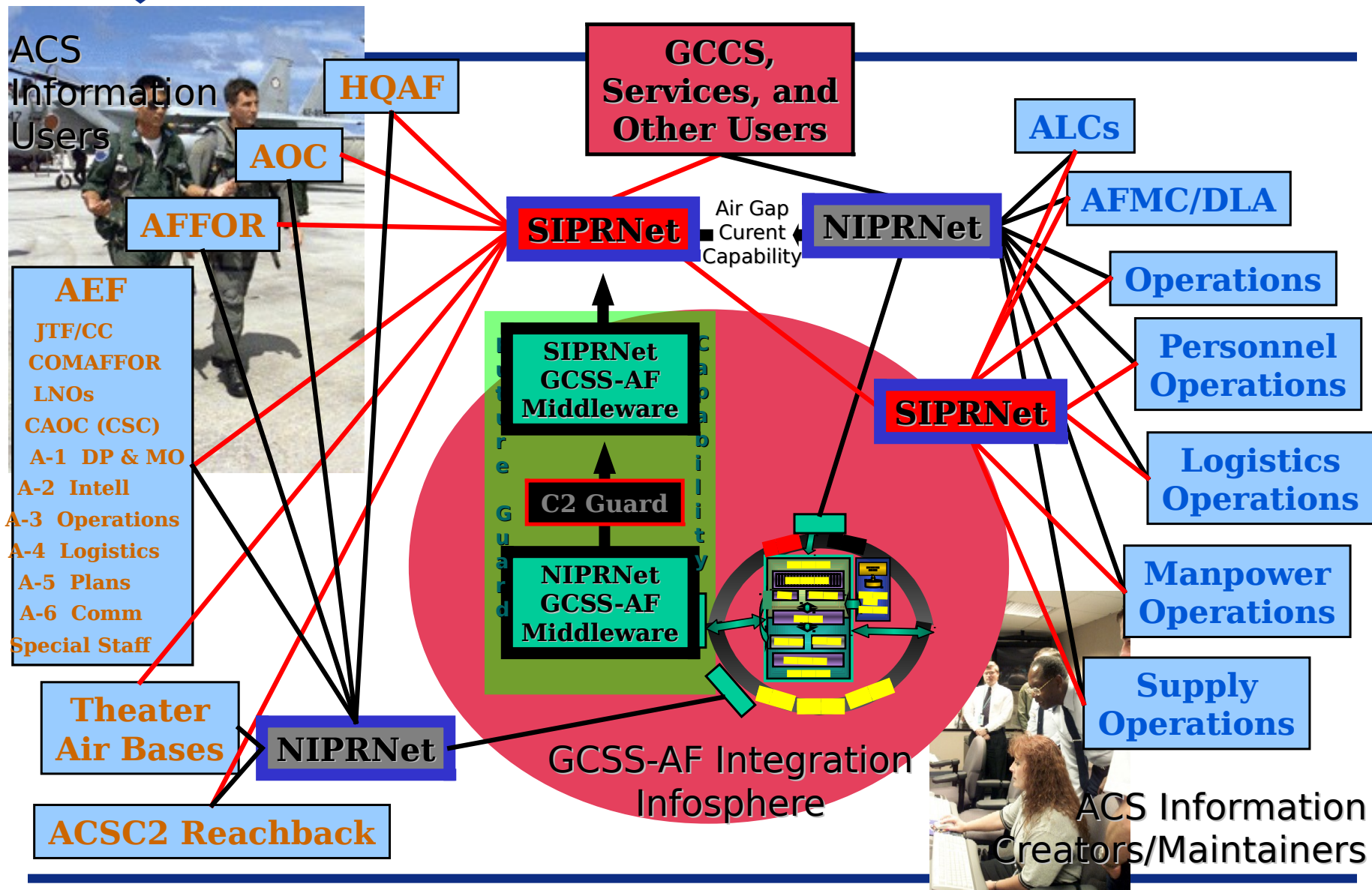
"Provide real-time and accurate data from authoritative data sources."

GCSS-AF Functional Pillars Ops Nodes

Acquisition
Chaplain
Civil Engineering
Communication
Comptroller
Contracting
Health Services
Legal
Logistics Plans
Maintenance
Material Management
Munitions
OSI
Personnel
Public Affairs
Quality and Manpower
Safety
Security Forces
Services
Space Support Teams
Supply
Transportation

"Provide cross-functional decision support tools."

Creators/Maintainers of ACS Information



Headquarters U.S. Air Force

Integrity - Service - Excellence

GCSS-AF Architecture



U.S. AIR FORCE



U.S. AIR FORCE

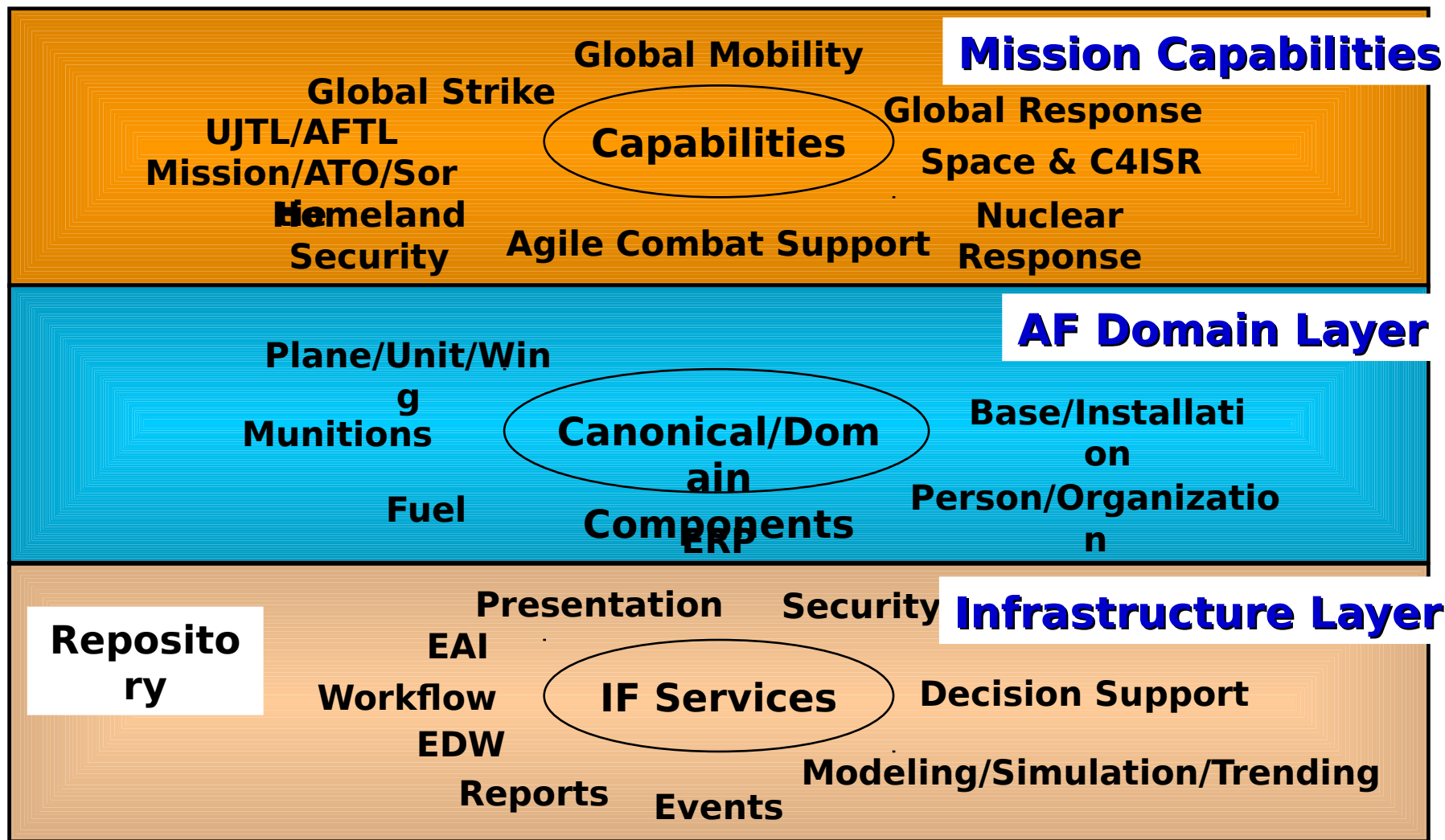
Operational Strategic Vision

- **Seamless Integration between CS and C2 crossing the big "stovepipe"**
- **Kill/Value chain focus (C2->CS Loop with feedback)**
- **Continuous ATO**
- **Abstraction (planes, people, and bases) of information and rules to allow warfighters to do their job and not be computer scientists (tables, rows, and columns)**
- **Capacity focused versus point in time inventories**
- **Aligned with GES (NCES)**



U.S. AIR FORCE

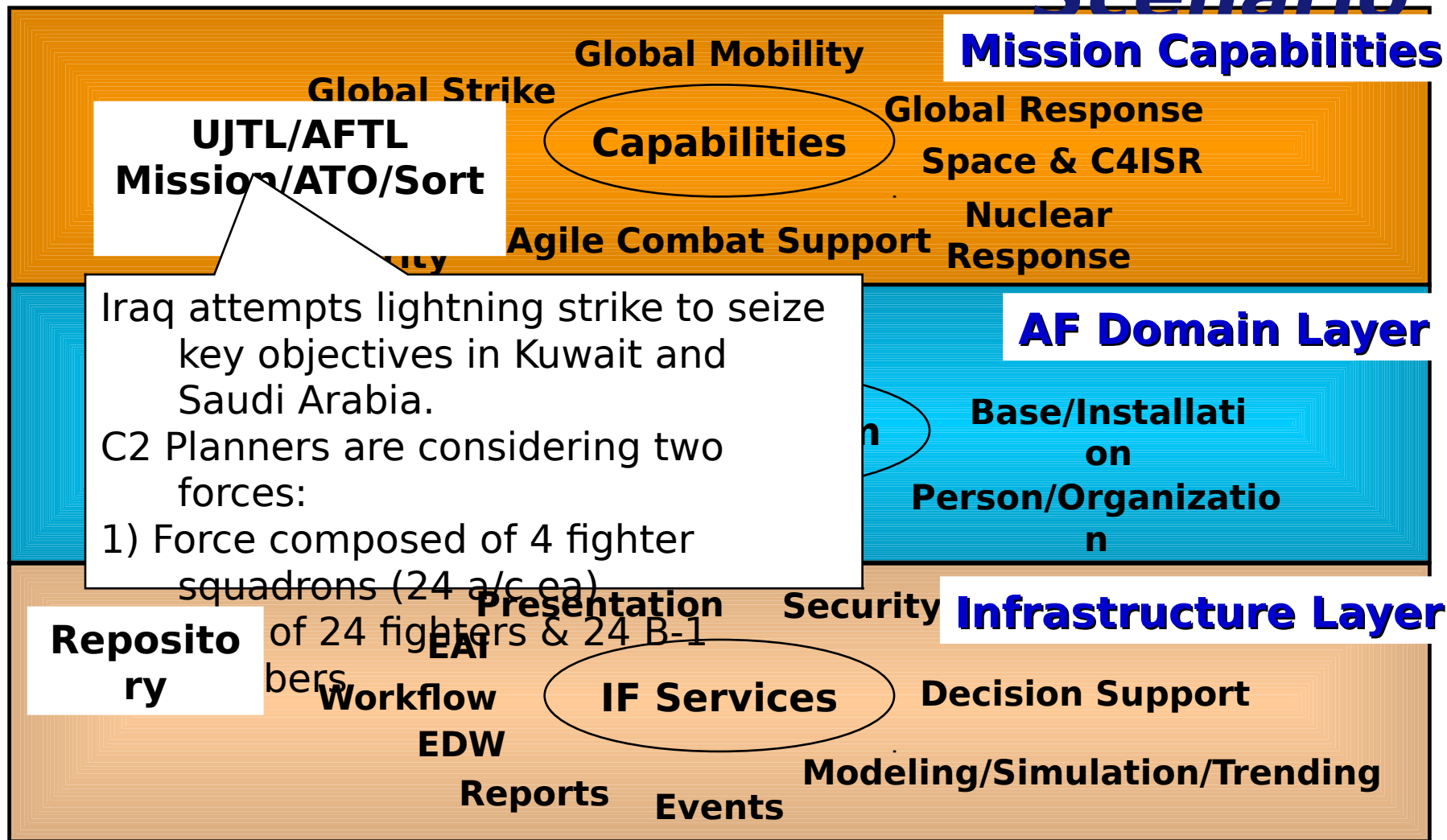
Information Architecture





U.S. AIR FORCE

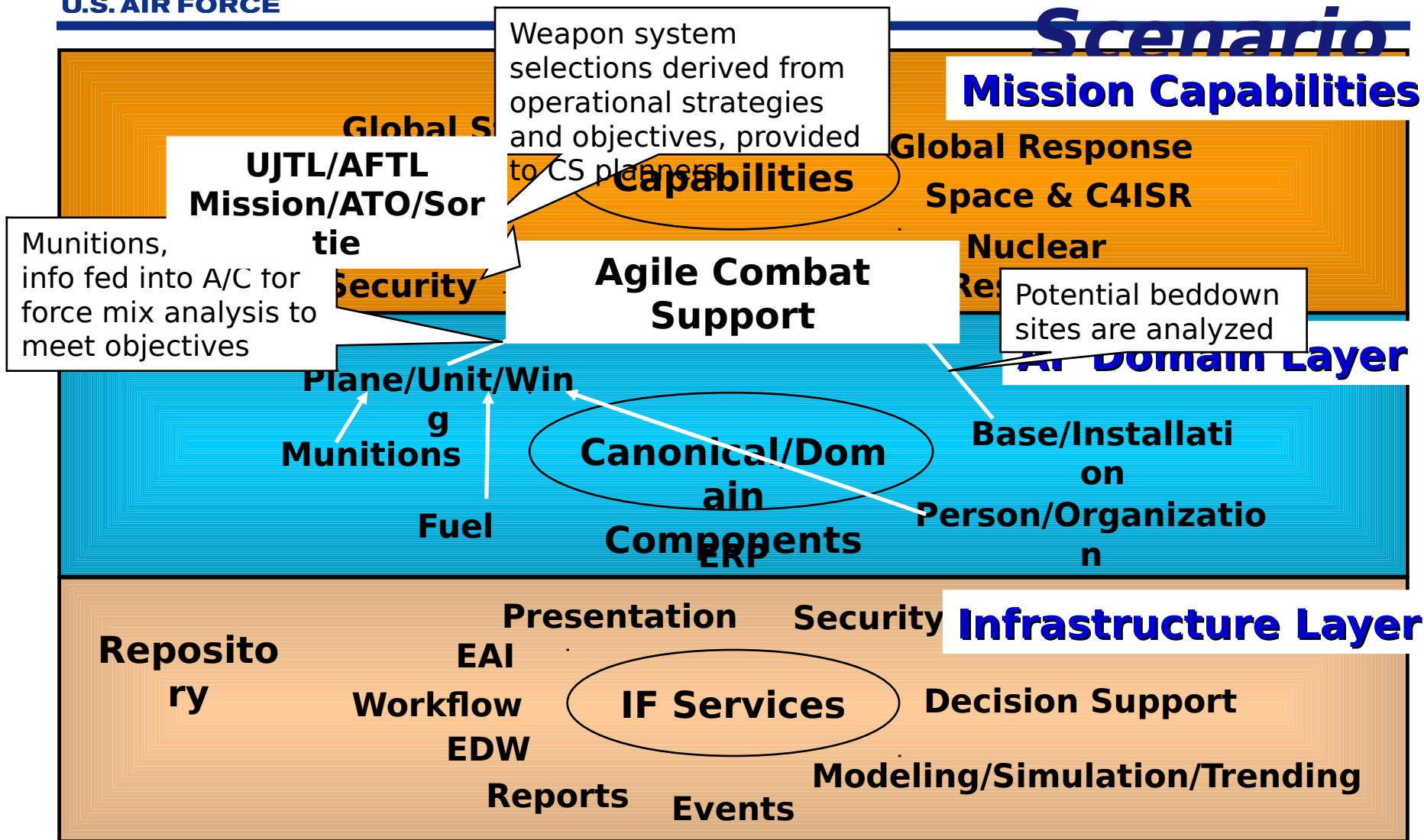
Information Architecture Small-Scale Conflict Scenario





U.S. AIR FORCE

Information Architecture Small-Scale Conflict Scenario





U.S. AIR FORCE

Information Architecture Small-Scale Conflict Scenario

Mission Capabilities

Weapon system selections derived from operational strategies and objectives, provided to CS planners

UJTL/AFTK
Mission/ATO/Port

Global Response
Space & C4ISR

Nuclear

Potential beddown sites are analyzed

Agile Combat Support

Munitions, Fuel, Pilot info fed into A/C for force mix analysis to meet objectives

Plane/Unit/Win

Munitions

Fuel

Canonical/Domain Components

Base/Installation

Person/Organization

Repository

Presentation

EAI

Workflow

EDW

Reports

Events

Security

IF Services

Modeling/Simulation/Rendering

Security services ensure that only those authorized, have access to info and also data xfer from low to high.



U.S. AIR FORCE

Information Architecture Small-Scale Conflict Scenario

Mission Capabilities

Weapon system selections derived from operational strategies and objectives, provided to CS planners

Global S

UJTL/AFTL

ATO/S

Munitions, Fuel, Pilot info fed into A/C for force mix analysis to meet objectives

Capabilities

Global Response

Space & C4ISR

Nuclear

Re

Potential beddown sites are analyzed

Agile Combat Support

Air Domain Layer

Plane/Unit/Win

Munitions

Fuel

Canonical/Dom
ain
Components

Base/Installati
on

Person/Organizatio
n

EDW used to get historical data (i.e. info about potential beddown sites)

Presentation

Security

Infrastructure Layer

EAI

Workflow

EDW

IF Services

Decision Support

Reports

Events

Modeling/Simulation/Trending



U.S. AIR FORCE

Information Architecture Small-Scale Conflict Scenario

Mission Capabilities

Weapon system selections derived from operational strategies and objectives, provided to CS planners

Global S

UJTL/AFTL

ATO/S

Munitions, Fuel, Pilot info fed into A/C for force mix analysis to meet objectives

Capabilities

Global Response
Space & C4ISR

Nuclear

Potential beddown sites are analyzed

Agile Combat Support

Air Domain Layer

Plane/Unit/Win

Munitions

Canonical/Dom
ain
Components

Base/Installati
on

Person/Organizatio
n

EAI used to get transactional data (I.e. munitions sustained production rate)

Repository

EAI

Workflow

Workflow services used to orchestrate data collection and processes.

Presentation

Security

Infrastructure Layer

IF Services

Decision Support

Modeling/Simulation/Trending

Reports

Events



U.S. AIR FORCE

Information Architecture Small-Scale Conflict Scenario

Mission Capabilities

Weapon system selections derived from operational strategies and objectives, provided to CS planners

Global S

UJTL/AFTL

ATO/S

Munitions, Fuel, Pilot info fed into A/C for force mix analysis to meet objectives

Global Response
Space & C4ISR

Nuclear

Re

Potential beddown sites are analyzed

Agile Combat Support

Ar Domain Layer

Plane/Unit/Win

Munitions

Fuel

Canonical/Dom
ain
Components

Base/Installati
on

Person/Organizatio
n

Presentation Se

EAI

Workflow

EDW

Reports

Events

IF Services

Modeling/simulation services used to what-if analysis against intended sortie rate & sortie duration for different force mixes.

Modeling/Simulation/Tren
ding



U.S. AIR FORCE

Information Architecture Small-Scale Conflict Scenario

Mission Capabilities

Weapon system selections derived from operational strategies and objectives, provided to CS planners

Global S

UJTL/AFTL

ATO/S

Munitions, Fuel, Pilot info fed into A/C for force mix analysis to meet objectives

Global Response
Space & C4ISR

Nuclear

Potential beddown sites are analyzed

Agile Combat Support

Air Domain Layer

Plane/Unit/Win

Munitions

Fuel

Canonical/Dom
ain
Components

Base/Installati
on

Person/Organizatio
n

Presentation

Security

Infrastructure Layer

Presentation services used to present info to C2 & CS users.

IF Services

Decision Support

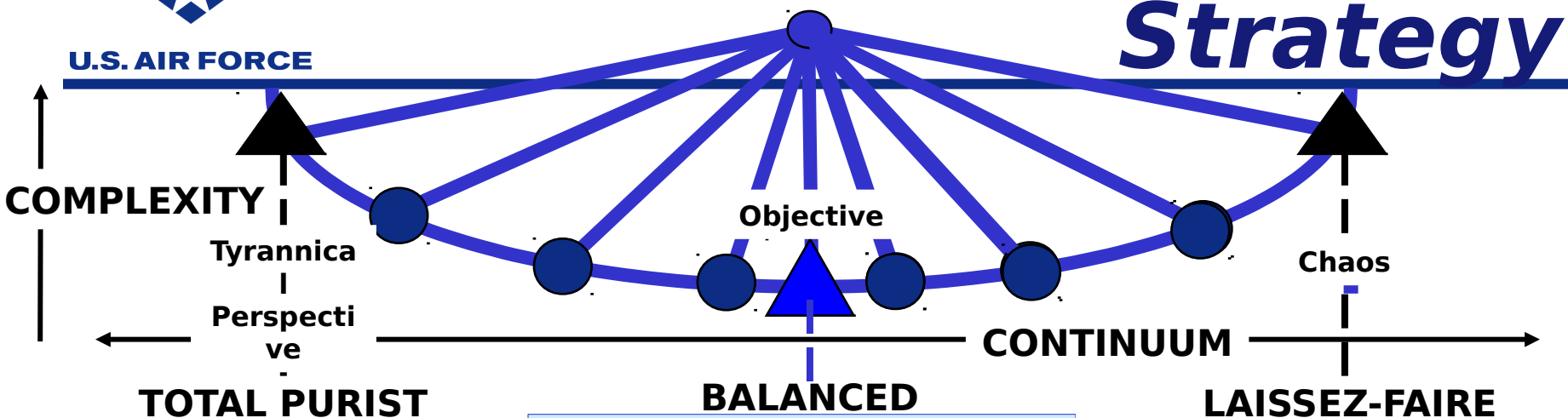
Modeling/Simulation/Trending

Reports

Events



Balanced GCSS-AF Strategy



CHARACTERIZED BY

- 1 Monolithic system
- Strict open standards (J2EE only)
- Mandatory / limited product suite
- Total compliance

PROs

- Improves AEF support
- Enterprise configuration control
- 'One' server
- Enterprise licensing
- Easy bridge to GCCS

CONS

- Expensive for customers to convert
- Tyranny. No waivers. No mercy

CHARACTERIZED BY

- Best value tailored services
- Centralized services, help desk
- Continuous attention to major market changes in standards
- Interoperability vs compliance

PROs

- Improves AEF support
- Flexibility
- Best return on investment**
- Centralized purchase of licenses**
- Best sustainment posture**
- Bridges to GCCS**

CONS

- Could incur sustainment of legacy code
- CM. Multiple systems / licenses

CHARACTERIZED BY

- All systems 'do their own thing'
- 'Any system is in'
- All product suites represented
- Zero compliance

PROs

- Each system controls their own destiny
- Customer doesn't pay any integration bills

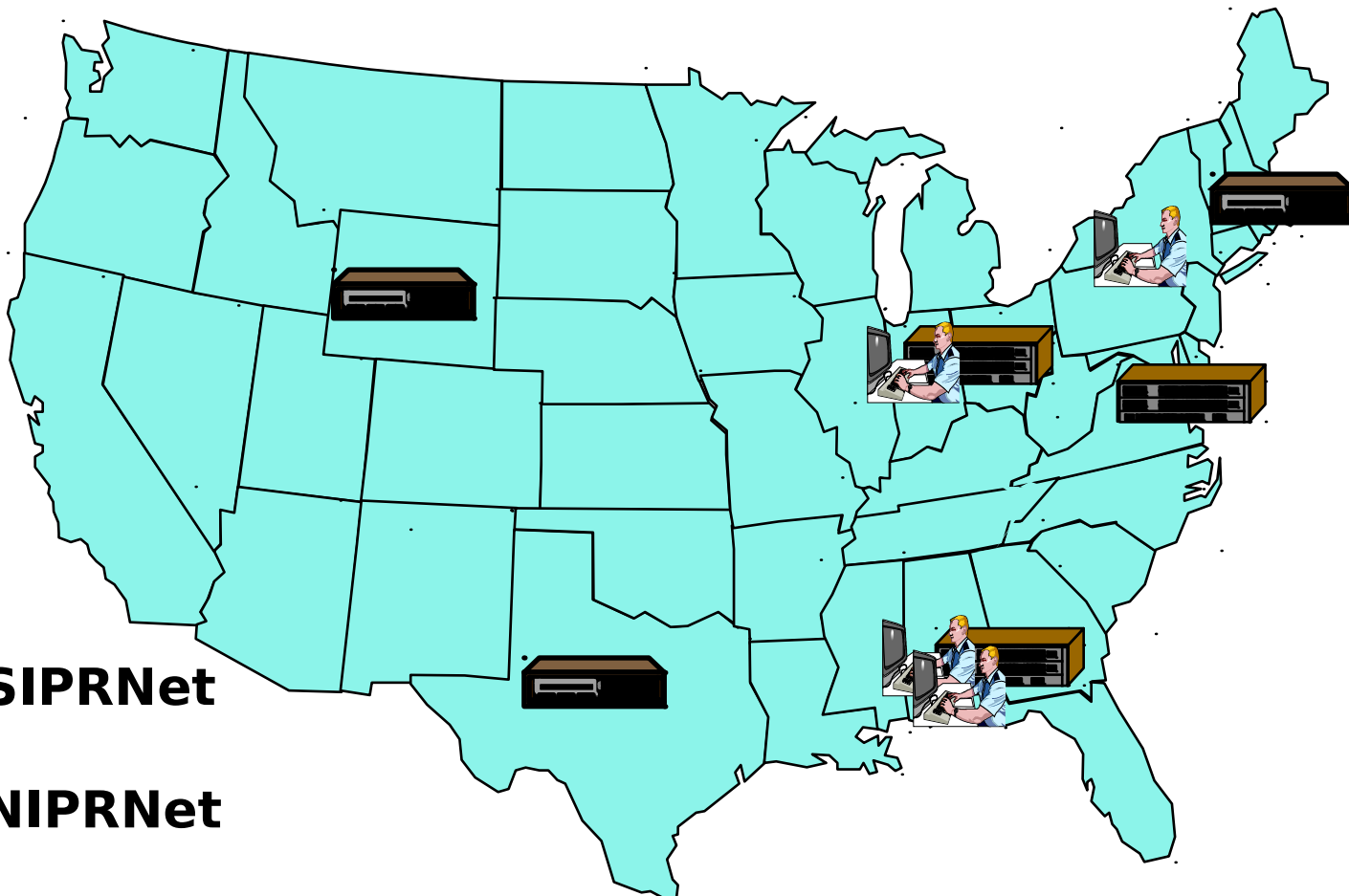
CONS

- Slow response to AEF support
- Can't leverage buying power
- Expensive configuration management
- Expensive sustainment
- Point to point bridge to GCCS



U.S. AIR FORCE

GCSS-AF Sites (Notional)



SIPRNet



NIPRNet



**Development
Center**



U.S. AIR FORCE

Discussion

Questions?